

north shore news

Dry summer puts focus on water use

Water snitches 'out' neighbours as public urged to conserve

Jane Seyd / North Shore News

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Phil Bates, District of West Vancouver's acting director of engineering and transportation, and Andy Kwan, manager of utilities, stand on the shore of **Eagle Lake** near the regular water intake valve that now sits high and dry. The reservoir is three metres below the normal level for this time of year. Photo Paul McGrath

Maybe it's the sound of that rhythmic sprinkler hiss in the early hours that attracts attention: Phtt. Phtt. Phtt.

Or a garden in the midst of a brown landscape that's a little too lush, a little too verdant.

But water use — both our own and our neighbours' — has been very much on people's minds lately.

Barbara Ohl was down at West Vancouver's Ambleside early Wednesday morning when she noticed the sprinklers in front of the Ferry Building. "They had three huge big shooting sprinklers," she said. "Half of it was going on the road."

Nearby, close to John Lawson Park, "You could see they'd just watered the lawn," she said.

Later on, Ohl posted pictures of the offending watering to social media. "It was way excessive," she said. "It wasn't just a light sprinkling."

Amanda Burton, who lives in the City of North Vancouver, also didn't have to look far to see what she considers over-the-top water use at a nearby apartment building. "It's the only building on the entire block with green grass," she said.

While watering by hand with a spring-loaded hose is still permitted under Stage 3 watering restrictions, Burton said it makes her crazy to see one of her neighbours standing with a hose for hours every evening. "She's standing out there watering a big Christmas tree," she said. "It's things like that that start to bug me."

As our long hot summer gets set to resume this week, drought-shaming on the North Shore is alive and well. Brown is the new green in the Lower Mainland. And the neighbours are paying attention.

Facebook sites have sprung up asking people to list addresses of the "grassholes" and "midnight hosers" who flout the rules with their water-hogging ways. At the District of North Vancouver, staff have been logging about 100 calls a day from citizens irate about excessive watering.

On Tuesday, Metro Vancouver banned all sprinkling, stepping up restrictions on outdoor water use in response to a record-breaking drought and falling reservoir levels.

It's the first time in 12 years the local government has put Stage 3 water restrictions in place and the first time that's happened so early in the summer. And while the five to 10 millimetres of rain that fell on Friday — the first since June 2 — was welcome, those responsible for our regional water system say it's literally a drop in the bucket.

Normally, rainfall in May, June and July is more than 154 mm, said Lisa Coldwells, a meteorologist with Environment Canada. This year, there's been only 16 mm in that same time period. "Even if we add 10 mm to that, we're still in a huge deficit," she said.

To recharge the reservoirs it takes closer to 150 mm of rain. That's nowhere in the long-range weather models so far, which still predict a continued hotter and drier than normal summer.

The North Shore's Capilano and Seymour reservoirs — along with the Coquitlam — supply water to about 2.5 million people in the Lower Mainland, more than half the population of the province.

When it's full, the Capilano reservoir holds the equivalent of 13,600 Olympic-sized swimming pools. But after almost three dry months, the reservoirs are draining fast.

On Tuesday, the combined reservoir levels had dipped to 69 per cent, and had been dropping at a rate of about four per cent per week. "We're seeing levels that are typical of where we'd be at the end of August," said Tim Jervis, Metro Vancouver's water manager.

At Eagle Lake, the municipal reservoir that supplies half of West Vancouver's water, a massive pipe snakes through baked earth where the eastern fringe of the lake has already been sucked dry, like the backbone of a prehistoric fossil. Bleached tree stumps dot the shore and the system's usual water intake valve sits high above the lake bed.

The lake is three metres below what it normally is at this time of year and the district is now pumping water from a deeper, floating pump station in the western part of the reservoir. It's the same story everywhere, says Phil Bates, West Vancouver's acting director of engineering and transportation, looking out at the parched shoreline: "This is the drinking water we have."

At the beginning of the summer, water managers at Metro Vancouver plugged what they thought were worst-case-scenario figures into their computer models, using data from one of the driest years on record — 1987 — to predict the likely trickle of water from snow melt and high elevation streams that would flow into the system.

But this year is worse. Snow pack in the local watersheds this spring was less than 10 per cent of the historical average, said Jervis. "If you go up there now to the inflows, there's virtually nothing coming into the lakes."

This week, technicians opened the valve to one of the region's back-up supplies, the high elevation Palisade Lake, which drains into the Capilano. The region could also tap into Burwell Lake and Loch Lomand, which feed into the Seymour Reservoir. But there are limits. Only half of Palisade Lake can be drained without risking water supplies in future years.

During the three-month drought, the Lower Mainland has been drawing an average of 1.5-billion litres a day from the reservoirs — a 50 per cent increase from average winter usage. That's not a figure that makes water managers happy.

When sprinkling was still allowed, a noticeable jump in demand and corresponding drop in water pressure kicked in around 4 a.m. — when automatic sprinklers were programmed to come on — even on days when sprinkling was forbidden.

In the few days the ban has been in effect, it looks like it's working: demand has dropped to below 1.2-billion litres a day.

As its population has grown, so has Greater Vancouver's water consumption. Overall use of a billion litres a day is more than 25 per cent higher than it was in thirty years ago. About 60 per cent of that water is used residentially, the rest by business and industry.

At the height of summer, water use can double. So far this year, water use on July 2 topped the charts, when the region dipped into the reservoirs to the tune of 1.7 billion litres.

The saving grace for the water system so far is while overall use has grown in recent decades, per capita water use has been falling.

In the mid-1980s, before conservation dented the public mindset, Metro Vancouver users flushed, sprinkled and showered their way

through 743 litres per capita daily and almost double that in summer.

In contrast, today's average per capita water use across the Lower Mainland is about 471 litres of water, including business and industrial uses. Days of peak summer demand pump that average up to 655 litres per person per day.

Part of the change to water use has come through regulation — like those requiring new buildings to install low-flow toilets and sprinkling restrictions, first adopted in 1992.

Other societal factors have also played a role. Across the region, fewer people live in big houses with big yards compared to earlier decades and condo-dwellers don't have lawns to water.

In the big picture, the three North Shore municipalities take a comparatively small portion of the region's water.

The City of Vancouver, for instance, uses almost six times the water that's used in the District of North Vancouver — the North Shore's biggest water user.

To give a sense of water habits in different sized populations, water managers prefer to look at how much water is being consumed per person each day. One often-overlooked detail is those figures also contain water used by industry. While that water is separately metered and paid for, it comes from the same water reservoirs as everyone else's.

While more than 80 per cent of West Vancouver's water use is residential, in the City of North Vancouver, port industries account for about 45 per cent of total water used. In the District of North Vancouver, industrial companies like Canexus and Erco use about 25 per cent of its water.

Those statistics are something people like Ron Sander, vice-president of major projects and environment at Neptune Terminals, are keenly aware of. "We recognize that people drive by here and are going 'I'm being told not to water my lawn and you guys are watering coal piles,'" he said.

Neptune is one of those large industrial users in the City of North Vancouver. The company uses water primarily to control dust from the coal piles — the most visible use — but also to wash down the dry bulk system when changing between different types of potash, for instance.

But Sander says the company, which employs about 350 people, is working to reduce water use.

In 2013, Neptune used 1.27 million cubic metres of water and paid more than \$1.1 million for that. In 2014, that number was down to 928,000 cubic metres and costs dropped to about \$912,000.

Part of the way the company has achieved that was to install systems that recycle more of the water.

Two weeks ago, Neptune turned off a company car wash, which normally removes coal and wheat dust from the cars of up to 400 Neptune and Cargill workers before they leave the site each day.

The company has also done some exploratory drilling on the site to look into the feasibility of tapping into the aquifer.

It's not just large industrial companies that are falling under the watchful eyes of citizens.

Joyce Taylor emailed the City of North Vancouver after watching water being sprayed over a Polygon demolition site on Esplanade. "It's a high use of water that really doesn't have a huge benefit," she said.

In this case, according to a follow-up letter from city staff, WorkSafeBC required the dust control. Industrial misters do give the impression of using more water than they actually are, the letter added.

But the site foreman was told to minimize water use as much as possible.

Taylor said she's happy to hear that. While she lives in a condo building where the sprinklers have been shut off, she sometimes questions whether neighbourhood water snitches are targeting the right people.

"It's out of proportion who's being shamed and who's being made to feel bad," she said.

But the majority of those doing the tweeting and outing of neighbours on social media clearly don't agree.

North Vancouver resident David Schreck took to Twitter last week to denounce the neighbour of a friend who refused to shut off the sprinkler. Schreck said he alerted the city only after his friend — who walks by the sprinkler hissing away at 5:30 every morning — had been told in less than polite terms to “take a hike” when she pointed out the sprinkling ban.

While he agrees that “it doesn’t build a strong community” when people are ratting out the neighbours, Schreck said anyone who ignores polite advice deserves what they get. Schreck added he’s been watering his own garden the hard way. “I run around with a little watering can,” he said.

Water managers say cutting unnecessary outdoor water use in summer is one of the easiest and cheapest ways governments have to head off a serious water shortage.

Residential use soars anywhere between 50 and 100 per cent in summer months — the same time as heat and lack of rain put pressure on reservoirs. In the District of North Vancouver, where single-family homes use about 300 litres of water per person per day over the year, about 40 per cent of the total residential water use happens in three summer months.

“It’s the low-hanging fruit that we can make immediate gains on,” says Gavin Joyce, manager of parks, engineering and facilities for the District of North Vancouver. “It’s the single biggest thing we can make a change to.”

All municipalities on the North Shore enforce watering restrictions by complaint — meaning they’ll only send a bylaw officer out to investigate if someone calls them. They also tend to give warnings rather than tickets for first-time watering offenders. For those who ignore those warnings, tickets range from \$100 in the District of North Vancouver to \$400 in West Vancouver. So far, the District of

North Vancouver has sent out nearly 500 pointed reminders to homeowners. More than 80 households in West Vancouver have been given warnings.

West Vancouver also has a tool that most municipalities don’t when it comes to water regulation: water meters.

So far, water metering has been adopted in relatively few communities in the Lower Mainland, despite evidence that price influences behaviour.

The cost of retrofitting homes with meters has proved a deterrent, at least compared to Metro Vancouver’s relatively cheap bulk water rates.

West Vancouver is an exception. Prior to 2006, the affluent community with more than its share of infinity pools, hot tubs and five-bathroom homes had a reputation for being water hogs.

To make matters worse, the top one-sixth of users were consuming more than 50 per cent of the water. After water meters were installed, usage patterns changed.

Not everyone was pleased when the first metered water bills arrived. But in the nine years the meters have been in, consumption has dropped by 25 per cent, to 546 litres per capita on average.

An escalating tariff structure means the more water used, the more expensive it becomes. But for West Vancouver, curbing summer use is still a challenge.

While winter water use in the municipality has been pegged at about 325 litres per person per day, in June of 2014 that figure climbed to more than 600 litres per person per day. This June, the figure shot up to 793 litres per capita.

To help address the problem, West Vancouver has hired a “water ambassador” to analyze the water usage figures and figure out who is using the most water — and why. The municipality plans to target high water users in an education campaign.

One good thing about the high rates of residential water use: “We have a lot of room to come down,” said Bates.

That’s a point watershed expert Hans Schreier of the University of British Columbia’s Institute for Resources, Environment and Sustainability agrees with. “We use far too much water and we have no real water accounting,” he said.

Water hasn’t been metered so we haven’t valued it, he said. “Everything else is metered which is of value,” said Schreier — Hydro and natural gas, for instance.

So far, the District of North Vancouver has 100 homes on a pilot water meter program. The City of North Vancouver believes it's a good idea — just too expensive to put in place on all older homes.

But, says Schreier, "Sooner or later we're going to have to do that."

Comparison between our rainforest climate and those of Arizona, California, or Australia seem inappropriate. Our restrictions are even more severe than the desert regions of the Okanagan. Planning??- cjk

Communities that put in water meters see an average decline in use of about 30 per cent, he said. Another relatively simple fix would be requiring that all homes have low-flush toilets, he said. That could easily account for another 30 per cent drop in water use, said Schreier. "That's massive."

Beyond that, in other jurisdictions where sustained drought has been a problem — like Arizona, California and Australia — reusing "grey water" from the shower and laundry for flushing toilets and irrigating plants is seen as part of the solution.

Until recently, regulations under B.C.'s building and plumbing codes around such "grey water" systems were confusing and complex. But recent changes mean it's much more do-able to install a separate "purple pipe" grey water system, said Schreier, which feeds into an outside storage system. "Why do we use bacteria-free water to put on plants and yards?" he said. "That's wasting as far as I'm concerned."

And given climate-change projections, "Now is the time to start initiating these ideas."

Changing our behaviour makes much more sense than rushing to develop new sources of water, said Schreier — most of which (like raising the height of the Seymour Falls dam) would cost hundreds of millions of dollars and be environmentally challenging.

"We use so much water," he said, that there's a lot of room to make small changes that "get us out of trouble."

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Water is not like oil. It does not get "consumed", but rather gets diverted before being recycled naturally. More than 70% of the water running into the Capilano reservoir is dumped straight into the ocean. Note that since we are close to the ocean, desalination, which, with the latest technology, produces water at a price on par with what is charged by the GVRD. Puzzling! - cjk

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